

Electron Microscopy Center Proposal

EMC Use
Only

Proposal Number

Date Submitted

Proposal Status

Date Approved or Rejected

You have logged-in to the EMC Proposal Database.

You must click the "Log Out" button before you close this browser window.

1. To start, click the "New Record" button in the area to the left of this window. It looks like this:



2. Netscape users: a text insertion bar will not be visible. Just click in the text fields and type.

3. You have 1 hour to complete the proposal.

1. Proposal Type:

2. Project Title:

3. Researchers:

Primary User:

ANL-assigned badge #

First/given name:

Last/family name:

Home institution:

Location of home
institiion:

U.S. state, etc:

Country:

Telephone:

Email:

Employment level:

Employer classification:

Citizenship (country):

Gender:

☐ Female ☐ Male

Ethnicity:

Date of birth:

 (month/day/year, e.g. 12/25/1965)

Additional information
for ANL employees:

Division:

Group Name:

Building:

Group Leader:

Co-investigators, collaborators, advisor:

Check "request in lab – yes" for those collaborators who want to be in the EMC labs for experiments. All persons who will be in the EMC labs must register with Argonne National Laboratory's National User Facilities at:

http://www.anl.gov/Science_and_Technology/userreg.html

The Primary User is responsible for notifying all in-lab collaborators of this requirement.

First Name	Last Name	Institution	US state or Country	Email	Request In-Lab
					<input type="checkbox"/> Yes
					<input type="checkbox"/> Yes
					<input type="checkbox"/> Yes
					<input type="checkbox"/> Yes
					<input type="checkbox"/> Yes
					<input type="checkbox"/> Yes
					<input type="checkbox"/> Yes
					<input type="checkbox"/> Yes

4. Project Description:

EMC staff with whom you have discussed this project:

Is the proposed project proprietary? ☐ Yes ☐ No

Note: Proprietary and nonproprietary work must be separated into different proposals.

Select all of the research subject categories that apply to this proposal:

- ☐ Materials sciences (includes condensed matter physics and materials chemistry)
- ☐ Physics (excludes condensed matter physics)
- ☐ Chemistry (excludes materials chemistry)
- ☐ Polymers
- ☐ Medical applications
- ☐ Biological and life sciences (excludes medical applications)
- ☐ Earth sciences
- ☐ Environmental sciences
- ☐ Optics
- ☐ Engineering
- ☐ User facility (EMC) instrumentation or technique development
- ☐ Other

Provide an abstract or short summary of the proposed research and state the scientific motivation behind the proposed research. In a separate paragraph, identify the specific hypotheses to be tested that will be addressed by the research in the EMC. Use only 1 or 2 sentences per hypothesis. If the work in the EMC will be only routine confirmation of sample quality, etc., the hypothesis solved by other analyses being done should be described in simple terms. A statement such as, "these results are needed to improve the properties of XYZ," is not sufficient to justify work in the EMC. [5000 character limit]

For a NEW proposal, describe any preliminary research that you have performed related to this project, especially results from electron microscopy. [5000 character limit]

For a CONTINUING/RENEWAL proposal, restate the hypotheses to be tested from the prior proposal and briefly summarize how each hypothesis was answered by the research and the role that the EMC played. Also, provide a list of your publications, reports, or conference presentations from your prior proposal that contain data obtained in the EMC or that depend on correlative data from the EMC that is referred-to but not included in the publication, report, or presentation. [7000 character limit]

Is research related to this project also being done at APS or CNM? Check all that apply and enter the proposal numbers.

Facility	Proposal?	Proposal Numbers
APS	<input type="checkbox"/> Yes	
CNM	<input type="checkbox"/> Yes	

Summarize the key scientific or engineering issues you would like to address through the use of EMC resources. [5000 character limit]

Describe your specimens. Include compositions, preparation methods, and whether they are magnetic (or can be magnetized).

5. Safety:

What hazards (toxic, carcinogenic, radioactive, reactive, nano, etc.) are associated with the specimen materials or other aspects of your proposed research? Enter hazards from MSDS for your materials.

6. Requested EMC Resources:

☐ IVEM-Tandem Facility ★
☐ Specimen preparation facilities
☐ ACAT: FEI Titan Cc-corrected TEM
☐ FEI Tecnai F20ST 200kV TEM/STEM
☐ Zeiss 1540XB FIB
☐ FEI CM30T 300kV TEM
☐ Hitachi S-4700-II FEG SEM
☐ FEI Quanta-400 FEG ESEM
☐ Other (itemize)

★ Note:
If you are requesting only the IVEM-Tandem Facility, check the IVEM-Tandem box at the left and skip the rest of section 6.

Itemize other resources:

For each resource that you request (not the IVEM-Tandem Facility), summarize the **experiments** to be performed and the **time** requested (hours/week or hours/month for a period of X months). Indicate any performance requirements (e.g. resolution), special modes, and accessories (e.g. hot/cold stage) needed for your proposed research.

Describe the extent of any specimen preparation that you will need to accomplish in the EMC.

If you have similar instruments in your institution, justify why you need access to EMC resources.

[3000 character limit]

7. User Training Information:

Provide the following information for each person who will use EMC instruments. Please note the requirements for prior training in electron microscopy on the EMC's web page:
<http://www.msd.anl.gov/groups/emc/usertraining.php>

Academic training in electron microscopy (i.e. university courses):

Experience (hands-on) using electron microscopes and related techniques. Please be as specific as possible (types and models of instruments, how often used, over what period of time, etc.):

Has each person who will use EMC instruments received instrument-specific training by EMC staff for each resource requested (required for user-operation)? ○ Yes ○ No

Specify the instruments for which additional training is needed:

8. Funding Sources:

Indicate all of the funding sources for this research:

- ☐ DOE Office of Basic Energy Sciences
☐ DOE Office of Biological & Environmental Research
☐ NNSA
☐ DOE other (includes LDRD)
☐ Homeland Security
☐ DOD
☐ NSF
☐ NIH
☐ NASA
☐ USDA
☐ Other U.S. government
☐ U.S. industry

☐ Foreign

☐ Other

9. IVEM-Tandem Facility Additional Information:

This section must be completed by all those who want to use the IVEM-Tandem Facilities in their research. Other people should skip this section.

Ion Species:

Ion Energies:

Specimen holders, etc. :

☐ Double-tilt heating

☐ Single-tilt straining & heating

☐ Double-tilt He-cooled

☐ Single-tilt electrical biasing & heating

☐ Double-tilt plus rotate

☐ Single-tilt gas reaction cell

☐ Gatan 622 video camera

☐ EDXS system

Other IVEM resources:

**Number of 8-hour shifts
requested:**

**Preferred dates and
grouping of shifts:**

Discuss the motivation for the specific ion beam and experimental requirements:

*Discuss why **in situ** irradiations are necessary for your project:*

Discuss why you need as much time as you are requesting:

10. User Agreement:

This proposal is for access to and use of the facilities and resources available in the Electron Microscopy Center at Argonne National Laboratory. Users who carry out proprietary work under this agreement will be charged an hourly fee that is based on full cost recovery. Users who carry out nonproprietary and publicly-disseminated work under this agreement will not be charged an hourly fee.

This proposal will remain active for a maximum period of one year following the approval date. Following these experiments, a research summary and progress report plus reprints and the full citation information for any publications or presentations must be provided.

A requirement of this agreement is that users acknowledge all work carried out in the EMC in all publications. Any acknowledgment must contain the following words: "The electron microscopy was accomplished at the Electron Microscopy Center for Materials Research at Argonne National Laboratory, a U.S. Department of Energy Office of Science Laboratory operated under Contract No. DE-AC02-06CH11357 by UChicago Argonne, LLC."

EMC staff frequently make major contributions to the research of EMC users through planning and execution of experiments, analysis and interpretation of data, or through collaboration and assistance in the research. It is expected that EMC staff members will be appropriately acknowledged and/or included as co-authors.

Users agree to follow all written User Guides, Standard Operating Procedures, posted notices, and verbal instructions of EMC staff regarding laboratory practices and instrument operation. In any situation in which a user feels uncertain about the safe and appropriate operation of an instrument, the user must consult with EMC staff. Failure to follow appropriate procedures and instructions may result in termination of user privileges. Users may be charged for costs associated with repair or replacement of equipment resulting from misuse and/or abuse.

**Type your name here if you understand and will
comply with the terms of the User Agreement:**

Date:

Submit the finished proposal and log out:

1. Click the "Submit" button in the area to the left of this window. A blank proposal form will appear, but be assured that the EMC has received your proposal. The EMC will send an email in a few days acknowledging receipt of the proposal.
2. Finally, click the "Log Out" button in the same area.
3. The proposal website will not automatically confirm that your proposal has been received. You will receive an email in a few days acknowledging receipt of the proposal.



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